Primary Leiomyoma of the Ovary
— A Report of 2 Resected Cases —

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Summary: Leiomyoma of the ovary is relatively rare and its origin is still controversial. Here, we report 2 cases of ovarian leiomyoma. Case 1, a 59-year-old woman who complained of abdominal distention. Ultrasonography and computed tomography revealed a large solid mass in the lower abdomen. The mass was diagnosed as uterine myoma preoperatively, but it turned out to be a left ovarian tumor at laparotomy. The tumor was about an adult-head size, grayish, elastic hard, and solid. In case 2, a fist-sized mass was accidentally detected in the right ovary of a 84-year-old woman during laparotomy for rectal cancer. Histologically both tumors were composed of solid proliferation of short spindle-shaped cells, that formed interlacing fascicles and showed varying degrees of hyalinization. Both tumors were diagnosed as leiomyoma. Although this tumor is rather infrequent, it is necessary to consider leiomyoma for differential diagnosis, when a solid tumor is detected in the ovary.

Key words leiomyoma, tumor, ovary

INTRODUCTION

Tumors of the ovary classified into many categories according to their origins. Although most primary ovarian tumors belong to the surface epithelium, sex cord-stromal, or germ cell category, a great variety of rarer neoplasms is of other or uncertain lineage [1]. Leiomyoma is of smooth muscle cell origin, and primary leiomyoma of the ovary is relatively rare. About 60 cases have been reported in English literatures since its original description by Sangalli [2] in 1863. This paper reports 2 resected cases of leiomyoma of the ovary.

CASE REPORT

Case 1

A 59-year-old postmenopausal woman (gravida 2 para 2) complained of abdominal distention and a large pelvic tumor was felt by a physician. She was referred to our hospital for further examination and treatment in July 2002. A well-defined and internally irregular abdominal mass was detected in the pelvic region by magnetic resonance imaging (MRI) (Fig. 1). Laboratory data were not remarkable. She underwent laparotomy under the clinical diagnosis of uterine tumor. At operation, the uterus was intact, and an adult-head size solid tumor was found in the left ovary. The right ovary and bilateral salpinx looked normal. Bilateral salpingo-oophorectomy was performed. The post operative course was uneventful.

Case 2

During the operation for rectal cancer in a 84-year-old woman, a fist-size solid tumor was accidentally detected in the right ovary, and right salpingo-oophorectomy was performed.

PATHOLOGIC FINDINGS

The tumor of Case 1 was 22×9×5 cm in size, uncapsulated, and elastic hard. The cut-surface of the tumor was pearly white and showed a coarse nodular
Fig. 1. MRI findings of Case 1. The pelvic mass is well-defined, monotonous in T1WI and irregular in T2WI.

Fig. 2. Gross appearance of the tumors (A: Case 1. B: Case 2). Both tumors replaced the ovary and the cut surface showed a coarse nodular appearance.

appearance. Slit-like yellowish mucinous degeneration was also observed. The tumor of Case 2 was 5.5 ×3×4 cm in size, unencapsulated, and elastic hard. The ut-surface of the tumor showed a whorled nodular pattern (Fig. 2).

Histologically, the tumors in Case 1 and 2 resembled common leiomyomas, and consisted of whorled interlacing fascicles of dense, uniform, spindle-shaped, cells (Fig. 3A). A cross-section of the bundles showed characteristic perinuclear clear spaces. The nuclei were primarily cigar-shaped, but some were more elongated and wavy. Nuclear atypia or pleomorphism were absent. The mitotic count was less than one per 10 high power fields (Fig. 3B). Varying degrees of hyalinization were observed in both tumors, but hyalinization was more dominant.
Fig. 3. Histological features.  
A) The tumors consisted of whorled interlacing fascicles of uniform spindle-shaped cells and slit-like blood vessels. (HE stain, ×100)  
B) High power view of the tumor. Spindle-shaped tumor cells had wavy nuclei and no mitosis was observed. (HE, ×200)  
C) Extensive hyalinization seen in the tumor of Case 2. (HE, ×200)

and extensive in Case 2. Immunohistochemically, the tumor cells of both cases were strongly positive for α-smooth muscle actin (α-SMA), desmin, and vimentin. Both tumors were confirmed as leiomyoma.

DISCUSSION

A primary leiomyoma of the ovary is rare and, to the author’s knowledge, only 60 cases have been reported in the English literatures as far as the authors concern. The tumor occurred of age 20 to 80 years. Approximately 80 percent of the cases arose in premenopausal women [1]. However, the present cases were elderly postmenopausal women. Most of the cases are asymptomatic and are found accidently on routine examination. Rarely, ovarian leiomyomas are associated with ascites and hydrothorax (Meig’s syndrome) [2]. Some of the ovarian leiomyomas were accompanied by hilus cell hyperplasia, and virilization due to markedly elevated plasma testosterone levels [3]. In general, ovarian leiomyomas do not appear to cause menstrual disturbances or abnormal genital bleeding unless associated with coexistent uterine leiomyomas [4]. In the present cases, Case 1 complained of abdominal distention and pelvic tumor was interpreted as uterine leiomyoma on computed tomography and MRI. In Case 2, however, the patient did not have any subjective symptoms until the age of 84, and the ovarian leiomyoma was accidentally found during an operation for rectal cancer. In all reported cases, including the cases reported here, the tumors were unilateral and uterine leiomyoma was not associated. The origin of primary ovarian leiomyoma is somewhat controversial, and several theories have been proposed. Fallahzedeh et al. [5] proposed that the tumor arose in the walls of blood vessels in the ovarian hilus. Lastarria et al. [6] suggested that the tumor derived from the normal ovarian stroma because they demonstrated desmin-positive smooth-muscle-like cells in the stroma. Okamura et al. [7] identified smooth muscle cells in both theca externa of the follicle and the cortical stroma by both histochemical and ultrastructural studies. In the present cases, as the tumors completely replaced the ovary, it was not possible to examin the origin of the tumor in detail.

Ovarian leiomyoma occasionally contains various signs of degeneration such as calcification, hyalinization and cavity formation as seen in leiomyoma arising in other places. Cystic degeneration has been frequently described in other large ovarian leiomy-
omas [6,8]. In the present 2 cases, the tumors also had hyalinization, particularly extensive in Case 2. The presence of marked hyalinization suggests a tumor of long standing. Previously, epithelioid and symplastic variants of leiomyoma have been described [9], as have rare lipoleiomyomas [10,11]. Immunoreactivities to desmin and α-SMA are useful to distinguish leiomyomas from other mesenchymal tumors, in particular thecoma/fibroma. A few cases of thecoma/fibroma expressing desmin were reported [6], but in such cases the positive reaction was much weaker than in cases of leiomyomas. In the present cases, the tumor cells were strongly positive to both desmin and α-SMA, and the tumors were confirmed as leiomyoma. Although it is infrequent, it is necessary to consider leiomyoma for a differential diagnosis when a solid tumor is detected in the ovary.

REFERENCES